

Explosive Destruction System (EDS)

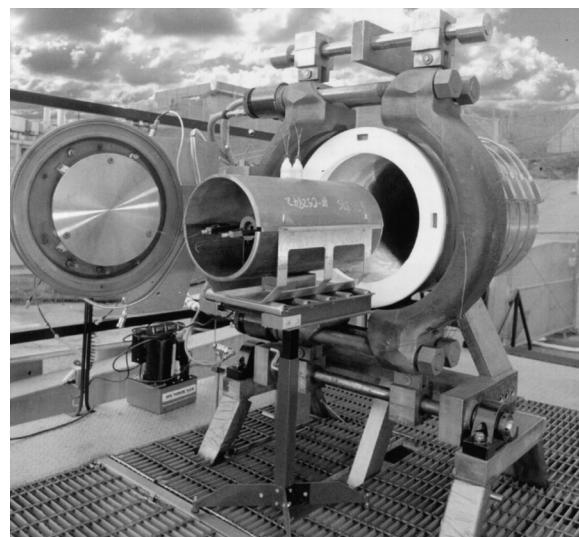
The Explosive Destruction System (EDS) is a transportable system designed to help the U.S. Army accomplish its mission to dispose of recovered chemical warfare materiel in a safe, environmentally sound manner. The primary component of the EDS is a stainless steel containment vessel. The system works by first placing a recovered chemical munition inside the containment vessel with commercial explosives attached to the munition. Then the commercial explosives are remotely detonated, which detonates the munition and opens its outer casing (shell body) under total containment (i.e., no release to the environment). Reagents are then pumped into the containment vessel to chemically react with the munition's payload. After allowing the mixture of chemicals to react, the resulting liquid waste is drained into drums for shipment to a commercial licensed facility. The air pressure generated inside the vessel during the detonation is then vented through a carbon filter, which removes the residual reagents from the air stream.

The use of the EDS as a treatment system is extremely flexible, because of its 316 stainless steel alloy construction. Since stainless steel is resistant to corrosion, a wide variety of chemicals can be treated in the EDS, both military and commercial.

In 1999, fabrication of a working prototype EDS was



*For more information,
contact the Public
Outreach and
Information Office of
the Program Manager
for Chemical
Demilitarization
at 1-800-488-0648*



completed. This system has a 50-gallon containment vessel, and is equipped with three 25-gallon tanks for water and reagents. The prototype EDS is designed to withstand the explosive force from a number of commonly recovered munitions such as the 75-mm, the 4.2-inch, and the 8-inch livens. These munitions plus the commercial explosives necessary to detonate them have a total explosive force equal to about one pound of dynamite. This system is called the EDS Phase I.

The EDS Phase I has been tested in the United Kingdom as part of a cooperative test and evaluation program. The United States and the United Kingdom both share the challenge of how to safely dispose of recovered chemical warfare materiel and are looking at the EDS Phase I to help resolve this problem.

Future plans include building an EDS Phase II, which has a larger explosive capacity. This new system will benefit from the lessons learned from the testing of the EDS Phase I.